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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/852,837	05/10/2001	Tan Thok Lin	EN11176	5460

7590 09/29/2004

Motorola Energy Systems Group  
Intellectual Property Department  
1700 Belle Meade Court  
Lawrenceville, GA 30043

EXAMINER

LE, LANA N

ART UNIT	PAPER NUMBER
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2685

DATE MAILED: 09/29/2004 4

Please find below and/or attached an Office communication concerning this application or proceeding.

## Office Action Summary

**Application No.**

09/852,837

**Applicant(s)**

LIN ET AL.

**Examiner**

Lana N Le

**Art Unit**

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 10 May 2001.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 1-7 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-7 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)  
Paper No(s)/Mail Date 3.
- 4) ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date. \_\_\_\_\_.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: \_\_\_\_\_.

## ***DETAILED ACTION***

### ***Information Disclosure Statement***

1. The information disclosure statement (IDS) submitted on 05/10/01 has been received and made of record. Accordingly, the information disclosure statement has been considered by the examiner.

### ***Claim Objections***

2. Claim 1 is objected to because of the following informalities: --the at least phone channel--- of line 9 doesn't have a prior disclosure in the claim but only "at least one phone audio bus" is discussed in line 7. A suggestion is to delete ---the--- in front of ---at least one phone channel---- or to change to ---the at least one phone audio bus----. claim 1, line 9, after "active" and before "the", a comma is needed.

Appropriate correction is required otherwise it might lead to a USC 112 rejection.

## ***Specification***

### ***Content of Specification***

- (f) Brief Summary of the Invention: See MPEP § 608.01(d). A brief summary or general statement of the invention as set forth in 37 CFR 1.73. The summary is separate and distinct from the abstract and is directed toward the invention rather than the disclosure as a whole. The summary may point out the advantages of the invention or how it solves problems previously existent in the prior art (and preferably indicated in the Background of the Invention). In chemical cases it should point out in general terms the utility of the invention. If possible, the nature and gist of the invention or the inventive concept should be set forth. Objects of the

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invention should be treated briefly and only to the extent that they contribute to an understanding of the invention.

3. A Summary of the Invention within specification, page 2 after line 9, is missing.

***Claim Rejections - 35 USC § 103***

4. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

5. Claims 1-7 are rejected under 35 U.S.C. 103(a) as being unpatentable over Hsieh (US 4,993,061) in view of Chen (US 6,349,223) and further in view of Adams (US 6,594,366).

Regarding claim 1, Hsieh discloses a switching circuit (fig. 5) comprising:

- a) at least one accessory IC acting as a switch (IC31-2 and IC31-4; col 3, lines 52-64);
- b) at least one phone IC acting as a switch (IC31-1 and IC31-3; col 3, lines 58-60);
- c) at least one call control signal (pilot signal input to IC21 indicating a phone call coupled to the at least one phone IC acting as a switch (IC31-1 and IC31-3) and one accessory IC acting as switch (IC31-2 and IC31-4) (the pilot call control signal is

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coupled via line bus at Q105 to the right and up the same line to IC31-1 and IC31-3 to control IC31-2 and IC31-4 to open and route the audio signal from IC11 to the earphone and is coupled to accessory IC31-2 and IC31-4 via control signal bus coming via Q105 to the right and up the same line up to IC31-2 and IC31-4 and the call control signal causes IC31-2 and IC31-4 to act as a switch by opening and cutting off the musical sound or cut off the accessory output to earphone 220; col 3, lines 52-60);

d) at least one accessory channel (top and bottom signal line from 206) from stereo cassette player (figs. 2 & 5) coupled (via 206, 205) to the at least one accessory switch (IC31-2 and IC31-4) (col 3, lines 37-51);

e) at least one phone audio bus (bus line from IC11) coupled to the at least one phone switch IC31-1, IC31-3 (col 3, lines 60-64);

f) at least one speaker (earphone 220; col 3, lines 60-64);  
wherein when the call control signal is active (pilot control signal is activated when there's an incoming call; col 3, lines 52-55), the at least one phone channel (audio bus of IC11 and microphone input 211) is coupled to the speaker 220 via IC31-1, IC31-3, and IC41 (the pilot call control signal is coupled via line bus at Q105 to the right and up the same bus line to IC31-1 and IC31-3 to control switches IC31-2 and IC31-4 to open and route the audio signal from IC11 to the earphone/speaker 220 via IC41; col 3, line 52 – col 4, line 2), and

when the call control signal is not active (pilot signal is not sent due to no incoming call detected; col 3, lines 52-55), the at least one accessory channel (top/bottom channel from tape head 206) is coupled to the at least one speaker (by

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sending musical signals from tape head 206 via the top/bottom signal line/channel through amplifier 205 to IC31-2 and IC31-4 down through 207 and to earphones 220 (see fig. 2; col 3, lines 36-51; or alternatively in fig. 5 from tape head (same configuration as in fig. 2) through IC41 through VR101 & VR102 and IC31-2 and IC31-4 and back to IC41 which will coupled the accessory channel (top/bottom channel of 206) to earphones 220; see fig. 5; col 3, lines 36-51).

Hsieh doesn't explicitly disclose:

the IC31-1 to IC31-4 are implemented as switches. Chen discloses an electronic switch (21) controlled to cut off the music signal from vehicle audio source (4) via call control signal from acoustic source control CPU 24 that determines whether an incoming call is received (col 2, lines 33-52) and controls the switch to turn off the music signal from the vehicle audio source (col 2, lines 33-42) and outputs incoming call signals to speakers 41. It would have been obvious to one of ordinary skill in the art at the time the invention was made to have the IC31-1 to IC31-4 be implemented switches in order to cut off the music signal when there's an incoming call to avoid interference of the phone signals and the cassette tape player signals.

Hsieh and Chen don't specifically disclose:

the switch circuitry can be field effect transistors. However, Adams discloses the switching circuitry can be field effect transistors (col 3, lines 52-61). It would have been obvious to one of ordinary skill in the art at the time the invention was made to replace the IC switches of Hsieh and Chen with the transistors of Adams in order to utilize any type of switching circuitry, i.e. field effect transistors, or other logic circuitry to represent

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the switches so that the call control signal can more easily cut off the music from the cassette tape player due to FETs' characteristic of low insertion loss, very fast switching speed, and simple control.

Regarding claim 2, Hsieh, Chen and Adams disclose the circuit of claim 1, wherein Hsieh further discloses the circuit comprises at least one microphone 211 (fig. 2) coupled to the at least one phone transistor (microphone 211 coupled via Q107 to IC31-1 and IC31-3 of fig. 5; col 3, lines 67 – col 4, line 2).

Regarding claim 3, Hsieh, Chen and Adams disclose the circuit of claim 2, wherein Hsieh further discloses the at least one accessory channel comprises a right audio channel (top channel from 206) and a left audio channel (bottom channel from 206; figs. 2 & 5).

Regarding claim 4, Hsieh, Chen and Adams disclose the circuit of claim 3, wherein Hsieh further discloses the at least one speaker comprises a right speaker and a left speaker ((right earphone and left earphone) 220; figs. 2 & 5).

Regarding claim 5, Hsieh, Chen, and Adams disclose the circuit of claim 4, wherein Adams further disclose the at least one phone transistor can be selected from other types of logic circuitry other than FET (col 3, lines 52-55).

Hsieh, Chen, and Adams didn't specifically disclose:

the at least one phone transistor are selected from the group consisting of MOSFETs, BJTs, and JFETs. However, MOSFETs, BJTs and JFETs are notoriously common and well known types of logic circuitry. It would have been obvious to one of ordinary skill in

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the art at the time the invention was made to substitute MOSFETs, BJTs and JFETs for the FET in order to have save power and high speed switching.

Regarding claim 6, Hsieh, Chen, and Adams disclose the circuit of claim 5, wherein Adams further disclose the at least one accessory transistor and the at least one phone transistor can be other types of logic circuitry other than FET (col 3, lines 52-55).

Hsieh, Chen, and Adams didn't specifically disclose the at least one accessory transistor and the at least one phone transistor are MOSFETs. However, it is well known in the art that MOSFETs are a particular kind of FETs. It would have been obvious to one of ordinary skill in the art at the time the invention was made to substitute MOSFETs for the FETs in order to minimize the effect of any differential offset currents and to avoid power losses.

Regarding claim 7, Hsieh, Chen, and Adams disclose the circuit of claim 6, wherein Adams further discloses the at least one accessory transistor and the at least one phone transistor can be other types of logic circuitry other than FET (col 3, lines 52-55). Hsieh, Chen, and Adams didn't specifically disclose:

wherein the at least one accessory transistor is a p-channel MOSFET and the at least one phone channel transistor is an n-channel MOSFET. However, it is well known that switches can be implemented as logic circuitry of a p-channel MOSFET and an n-channel MOSFET. It would have been obvious to one of ordinary skill in the art at the time the invention was made to include a p-channel MOSFET an n-channel MOSFET in



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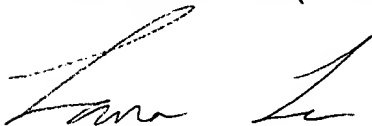
order to prevent leakage of the AC components of the input signal to the output terminal.

### ***Conclusion***

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Lana N Le whose telephone number is (703) 308-5836. The examiner can normally be reached on M-F.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Edward F Urban can be reached on (703) 305-4385. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



Lana Le

September 19, 2004